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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,817	12/04/2003	Daniel M. Kuchta	YOR920030563US1 (163-23)	7470
24336 7590 12/19/2007 KEUSEY, TUTUNJIAN & BITETTO, P.C. 20 CROSSWAYS PARK NORTH SUITE 210 WOODBURY, NY 11797			EXAMINER KIM, DAVID S	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 12/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/727,817	Applicant(s) KUCHTA ET AL.	
	Examiner David S. Kim	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-12, 15-22, 24 and 25 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☒ Claim(s) 10, 11 and 15-17 is/are allowed.
 6) ☒ Claim(s) 1, 2, 4-9, 12, 18-22, 24 and 25 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claim 17** is objected to because of the following informalities:

Claim 17 depends on "claim 1" where -- claim 10 -- may be intended.

Appropriate correction is required.

Allowable Subject Matter

2. The indicated allowability of the subject matter of the **previous versions of claims 3, 12, and 23** is withdrawn in view of a new ground of argument under 35 U.S.C. 112, first paragraph. See below for details.
3. **Claims 10, 11, and 15-17** are allowed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 1, 2, 4-9, 12, 18-22, 24, and 25** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In particular, notice the usage of the term "a Wheatstone Bridge type circuit" in independent claims 1 and 18. Support for this "Wheatstone Bridge type circuit" is found in Fig. 4 and p. 12, l. 11 – p. 15, l. 5. However, this term appears to be used in contrary to its ordinary meaning. The term "Wheatstone Bridge type circuit" in claims 1, 2, 4-9, 12, 18-22, 24, and 25 is used by the claims to describe the circuit found in Fig. 4 and p. 12, l. 11 – p. 15, l. 5. However, the ordinarily accepted characteristics of a "Wheatstone Bridge" differ significantly from the characteristics of Applicant's circuit found in Fig. 4 and p. 12, l. 11 – p. 15, l. 5. Therefore, the claims contain subject matter ("a Wheatstone Bridge type circuit") which was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The term "a Wheatstone Bridge type circuit" in the claims is not supported, but rather misleading, because Applicant's circuit does not appear to possess the sufficient characteristics to qualify as "a Wheatstone Bridge type circuit" at all. More exactly, consider the following characteristics of the Wheatstone Bridge described in Diefenderfer (*Principles of Electronic Instrumentation*, 2nd ed.):

- the components comprise resistors (resistors in Figure 4.22) and a detector (galvanometer G)
- the usage is for measurement (last full paragraph on p. 91).

Applicant's circuit differs from a standard Wheatstone Bridge in the following ways:

- some of the corresponding components comprise capacitors (Cs and Cg in Fig. 4) and an inductor (Lb)
- the usage is for providing a particular type of transmission (notice the three cases in Fig. 5).

On the other hand, a standard Wheatstone Bridge is similar to Applicant's circuit in the following ways:

- there are two main branches, each with two components for a total of four components
- the two main branches are bisected by a fifth component.

Nonetheless, Diefenderfer shows other bridge circuits that are also similar to Applicant's circuit in the same ways, e.g., generalized ac bridge (Figure 4.24) and the Wien bridge (Figure 4.25). Yet, these other bridge circuits are still distinct from a standard Wheatstone Bridge. Accordingly, the similarities between a standard Wheatstone Bridge and Applicant's circuit do not sufficiently qualify Applicant's circuit as a "Wheatstone Bridge type circuit". Therefore, this "Wheatstone Bridge type circuit" constitutes subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As a remedy, Examiner respectfully suggests Applicant to amend the claims so that the language does not employ the term "a Wheatstone Bridge type circuit". Rather, Applicant may provide a more precise description of the desired subject matter (i.e., Applicant's circuit) in any number of available ways, e.g., description of the components employed and/or description of the physical configuration.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. **Claims 1-2, 4, 6-9, 18-22, and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hogan et al. (U.S. Patent Application Publication No. US 2004/0091268 A1, hereinafter "Hogan") in view of Shaffner et al. (U.S. Patent Application Publication No. 2004/0227583 A1, hereinafter "Shaffner") and Koh et al. (U.S. Patent Application Publication No. 2005/0201711 A1, hereinafter "Koh").

Regarding claim 1, Hogan discloses:

A radio frequency device, comprising:

a signal layer having radio frequency (RF) transmission lines (e.g., RF lines in Fig. 5) disposed over a ground plane (e.g., ground plane in Fig. 5).

Hogan does not expressly disclose:

the RF lines configured and dimensioned to provide impedance matching along the RF lines.

Rather, Hogan discloses a different means for providing impedance matching (impedance matching in paragraph [0037]). However, configuring and dimensioning RF lines is another known means for providing impedance matching along the RF lines. Shaffner provides some examples (Figs. 7a-8 and 10, impedance matching portions 15). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement different means for providing impedance matching, including the configuring and dimensioning of RF lines. One of ordinary skill in the art would have been motivated to do this to provide at least design flexibility. Additionally, by using the technique of configuring and dimensioning RF lines, one can simplify the apparatus of Hogan by removing its impedance matching film resistors (Hogan, paragraph [0037]).

Hogan in view of Shaffner does not expressly disclose:

a shield formed as a part of the RF lines and disposed below an RF choke of a DC current supply to form an intermediate capacitance between the choke and the shield to control parasitic effects wherein

the intermediate capacitance and impedances of the parasitic effects form a circuit which controls the parasitic effects.

However, the usage of a shield formed as part of RF lines is known in the art. Koh teaches RF lines with shield parts (e.g., 20 shielded by its own shield 16 in Fig. 6C, paragraph [0061]). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to employ shielding teachings with the RF lines of Hogan. One of ordinary skill in the art would have been motivated to do this since shielding is a common practice for blocking undesired electrical interference between various electrical components.

Moreover, the physical placement of an RF choke can be an issue of design choice. A suitable physical location could be on top of this shield to save space on the circuit plane. In such a location, an intermediate capacitance could form between the choke and the shield, resulting in reduced parasitic effects. Any impedances of the parasitic effects that electrically interact with the intermediate capacitance would form a circuit with the intermediate capacitance. As this circuit would affect the parasitic effects, it would, at least in part, control the parasitic effects.

Regarding claim 2, Hogan in view of Shaffner and Koh discloses:

The device as recited in claim 1, wherein the device includes an optical transceiver having a laser biased by the DC current supply (Hogan, BIAS in Fig. 5).

Regarding claim 4, Hogan in view of Shaffner and Koh does not expressly disclose:

The device as recited in claim 1, wherein a balance between the intermediate capacitance versus the parasitic effects is achieved to provide a flat or peaked transmission response over a selected frequency range.

However, this limitation does not significantly limit the claimed invention since the device of Hogan in view of Shaffner and Koh would inherently have some kind of transmission response over a selected frequency range, and such responses are generally flat or peaked over a selected frequency range.

Regarding claim 6, Hogan in view of Shaffner and Koh discloses:

The transceiver as recited in claim 1, further comprising a submount for supporting the choke (Hogan, notice the physical mounting structure of choke 34 in the Figures).

Regarding claim 7, Hogan in view of Shaffner and Koh discloses:

The transceiver as recited in claim 1, wherein the RF line supplies AC signals to a laser diode (Hogan, AC RF signals in paragraph [0037]).

Regarding claim 8, Hogan in view of Shaffner and Koh discloses:

The transceiver as recited in claim 7, further comprising a lens (Hogan, lens 28 or 216 in the Figures) to focus light output from the laser diode.

Regarding claim 9, Hogan in view of Shaffner and Koh discloses:

The transceiver as recited in claim 1, further comprising a photodiode (Hogan, e.g., monitor photodiode 29; also, notice receiver portion 3 that would generally comprise a photodiode as the optical receiver).

Regarding claim 18, Hogan in view of Shaffner and Koh discloses:

A method for fabricating a transceiver, which simultaneously provides impedance matched transmission for radio frequency (RF) and shields against transmission losses due to parasitic effects, comprising the steps of:

identifying parasitic electromagnetic elements associated with an RF choke for a given placement on a substrate (in view of the discussion of Shaffner and Koh above, one would expect that particular elements would introduce parasitic effects associated with RF choke 34 of Hogan); and

placing and dimensioning RF lines on the bench to form impedance matched RF lines (Shaffner, Figs. 7a-8 and 10, impedance matching portions 15) wherein a portion of the RF lines shield (see the discussion of the placement of shielding below RF choke 34 of Hogan in view of Shaffner and Koh above) the RF choke for a given bandwidth (any suitable bandwidth) such that impedance matching (Shaffner, Figs. 7a-8 and 10, impedance matching portions 15) and control of parasitic effects (Shaffner and Koh, see discussion of parasitic effects above) of the RF choke are simultaneously (the simultaneous provision of these effects would be expected in the combination of Hogan and Shaffner and Koh) provided; and

forming an intermediate capacitance using the shield (discussion of shield in view of Shaffner and Koh above) wherein the intermediate capacitance and impedances of the parasitic effects form a circuit

which controls the parasitic effects (discussion of the circuit formed by the intermediate capacitance and the impedances of the parasitic effects above).

Regarding claim 19, Hogan in view of Shaffner and Koh does not expressly disclose:

The method as recited in claim 18, further comprising the step of iteratively modifying the placing and dimensioning of the RF lines to meet specifications.

However, such an iterative step is a common manufacturing step in the fabrication of devices. At the time the invention was made, it would have been obvious to one of ordinary skill in the art to include such a step in the fabrication of a transceiver of Hogan in view of Shaffner and Koh. One of ordinary skill in the art would have been motivated to do this since it is generally known that iterations allow one to compare different versions of a product according to different parameters so that one can eventually achieve desired specifications. This basic and well-known concept of trial and error meets this limitation.

Regarding claim 20, Hogan in view of Shaffner and Koh discloses:

The method as recited in claim 18, wherein the parasitic effects include a parasitic inductance for an electrical path (an electrical path of Hogan, e.g., trace lead(s) in paragraphs [0037-0038] inherently include a parasitic inductance) from the RF choke to a laser and a parasitic capacitance (the configuration of the RF choke set apart from the ground plane constitutes a parasitic capacitance) between the RF choke and ground plane.

Regarding claim 21, Hogan in view of Shaffner and Koh discloses:

The method as recited in claim 18, further including a submount (Hogan, notice the physical mounting structure of choke 34 in the Figures) for the RF choke and further comprising the step of modifying the RF choke submount location such that a parasitic capacitance of the RF choke to ground is shielded (e.g., see the discussion of the placement of shielding below RF choke 34 of Hogan in view of Shaffner and Koh above).

Regarding claim 22, Hogan in view of Shaffner and Koh discloses:

The method as recited in claim 18, wherein the transceiver is an optical transceiver (Hogan, transceiver in paragraph [0031]).

Regarding claim 24, Hogan in view of Shaffner and Koh does not expressly disclose:

The method as recited in claim 23, further comprising balancing between the intermediate capacitance versus the parasitic effects to provide a flat or peaked transmission response over a selected frequency range.

However, this limitation does not significantly limit the claimed invention since the transceiver of Hogan in view of Shaffner and Koh would inherently have some kind of transmission response over a selected frequency range, and such responses are generally flat or peaked over a selected frequency range.

Additional Remarks

8. Notice the new ground of rejection under 35 U.S.C. 112, first paragraph (written description).
9. Notice the new ground of rejection under 35 U.S.C. 103.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK


KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER